



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/633,470	07/31/2003	Robert Kincaid	10020348-1	5138

7590 09/21/2006

AGILENT TECHNOLOGIES, INC.
Legal Department, DL 429
Intellectual Property Administration
P.O. Box 7599
Loveland, CO 80537-0599

EXAMINER

BRUSCA, JOHN S

ART UNIT PAPER NUMBER

1631

DATE MAILED: 09/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/633,470

Applicant(s)

KINCAID ET AL.

Examiner

John S. Brusca

Art Unit

1631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 7/31/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____.

Art Unit: 1631

DETAILED ACTION

Drawings

1. The drawings were received on 29 March 2004. These drawings are not accepted
2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings filed 29 March 2004 are not labeled as “replacement sheet.”

Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

INFORMATION ON HOW TO EFFECT DRAWING CHANGES

Replacement Drawing Sheets

Drawing changes must be made by presenting replacement sheets which incorporate the desired changes and which comply with 37 CFR 1.84. An explanation of the changes made must be presented either in the drawing amendments section, or remarks, section of the amendment paper. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). A replacement sheet must include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of the amended drawing(s) must not be labeled as “amended.” If the changes to the drawing figure(s) are not accepted by the examiner, applicant will be notified of any required corrective action in the next Office action. No further drawing submission will be required, unless applicant is notified.

Identifying indicia, if provided, should include the title of the invention, inventor’s name, and application number, or docket number (if any) if an application number has not been assigned to the application. If this information is provided, it must be placed on the front of each sheet and within the top margin.

Annotated Drawing Sheets

A marked-up copy of any amended drawing figure, including annotations indicating the changes made, may be submitted or required by the examiner. The annotated drawing sheet(s) must be

Art Unit: 1631

clearly labeled as "Annotated Sheet" and must be presented in the amendment or remarks section that explains the change(s) to the drawings.

Timing of Corrections

Applicant is required to submit acceptable corrected drawings within the time period set in the Office action. See 37 CFR 1.85(a). Failure to take corrective action within the set period will result in ABANDONMENT of the application.

If corrected drawings are required in a Notice of Allowability (PTOL-37), the new drawings MUST be filed within the THREE MONTH shortened statutory period set for reply in the "Notice of Allowability." Extensions of time may NOT be obtained under the provisions of 37 CFR 1.136 for filing the corrected drawings after the mailing of a Notice of Allowability.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-9 are indefinite because it is not clear what is meant by the phrase "virtualizing microarray." The phrase is not defined in the specification, and it might be interpreted to be either data, or an apparatus that is a microarray, or an apparatus that processes a microarray.

Claims 1-9 are indefinite because it is not clear what is meant by the phrase "catalog microarray." The phrase is not defined in the specification, and it might be interpreted to be either data, or an apparatus that is a microarray. It is further indefinite because it is not clear how a catalog microarray differs from a microarray.

Claim Rejections - 35 USC § 101

5. 35 U.S.C. 101 reads as follows:

Art Unit: 1631

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-6, 8, and 9 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claimed subject matter includes embodiments that consist of data. Data is not within the statutory categories of invention defined by 35 U.S.C. 101. See MPEP 2106. Although claim 6 comprises limitations regarding methods of making the data, the claim is a product by process claim that is drawn to data.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-3, 5, and 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Taylor (US 2002/0052882)

The claims are drawn to virtual microarrays comprising a subset of data of a microarray. In some embodiments the virtual microarray comprises data concerning the position of the elements of the microarray, the type of probe in the microarray, the target molecule of the probe of the microarray, and the function, process, and cellular component of the element of the microarray. In some embodiments the virtual microarray is made by removing features of the microarray

Taylor shows a virtual microarray in page 1 in which correspondence between positions of the microarray and the virtual microarray are known. Taylor shows deletion of data from the microarray when creating the virtual microarray in page 2, paragraphs 28 and 29, and page 3

Art Unit: 1631

paragraph 34. Taylor shows virtual microarrays that comprise data related to elements of the microarray on pages 6-9, including information about the probe, and the gene and tissue from which it was derived.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor in view of King et al.

The claims are drawn to virtual microarrays comprising a subset of data of a microarray. In some embodiments the virtual microarray comprises data concerning molecules whose synthesis is directed by the molecule that binds to a probe in the microarray.

Taylor shows a virtual microarray in page 1 in which correspondence between positions of the microarray and the virtual microarray are known. Taylor shows deletion of data from the

Art Unit: 1631

microarray when creating the virtual microarray in page 2, paragraphs 28 and 29, and page 3 paragraph 34. Taylor shows virtual microarrays that comprise data related to elements of the microarray on pages 6-9, including information about the probe, and the gene and tissue from which it was derived. Taylor does not show data concerning molecules whose synthesis is directed by the molecule that binds to a probe in the microarray.

King et al. reviews the need for controls in interpreting data derived from microarrays. King et al. shows in figure 3 and page 2286-2287 that a useful control is to verify microarray data by performing reverse transcriptase polymerase chain reactions. Figure 3 makes clear that such assays use primer and RNA or cDNA polynucleotides that comprise sequences that hybridize to the microarray probe to direct synthesis of polynucleotides.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to add the verifying data produced by the method of King et al. to the virtual microarray data of Taylor to provide evidence that the data of the virtual microarray is accurate.

11. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taylor in view of Ramdas et al.

The claims are drawn to virtual microarrays comprising a subset of data of a microarray. In some embodiments the virtual microarray is made by a scanner and a data processing and visualization system.

Taylor shows a virtual microarray in page 1 in which correspondence between positions of the microarray and the virtual microarray are known. Taylor shows deletion of data from the microarray when creating the virtual microarray in page 2, paragraphs 28 and 29, and page 3

Art Unit: 1631

paragraph 34. Taylor does not show a virtual microarray is made by a scanner and a data processing and visualization system.

Ramdas et al. shows three systems that allow for automated analysis of microarrays that comprise scanners and computer controlled visualization systems in the abstract and throughout. Ramdas et al. conclude on page 552 that all three systems provide useful and comparable outputs of data from a microarray.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the method of making virtual microarrays of Taylor by use of any of the scanners of Ramdas et al. because Ramdas et al. shows that the scanners allow for automation and useful determinations of the data in a microarray.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John S. Brusca whose telephone number is 571 272-0714. The examiner can normally be reached on M-F 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Wang can be reached on 571 272-0811. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1631

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

John S. Brusca 15 September 2008

John S. Brusca
Primary Examiner
Art Unit 1631

jsb